Paper/Work

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LAWRENCE LIVERMORE POSTDOC ASSOCIATION

DANCE OPPORTUNITIES AT THE LAB & NEARBY

By Heather Whitley

Bored with your current exercise routine? Looking for a way to meet people? Looking for an activity that incorporates mental focus and emotion with physical activity? Decided to choreograph your next article[1] instead of writing it? If you answered "yes" to any of these questions, taking dance classes may be a great place to start. LLESA offers a variety of dance classes ranging from social dance (including salsa, tango, and west coast swing) to ballet and modern dance. Most classes run in 5-week sessions, and many take place during lunch and offer employees a welcome break from the office or lab. There is also a social dance networking group at the lab, and the social dancers often meet to practice.

Most dance aficionados recognize ballet as the cornerstone of dance. The strengthening and balance exercises that are standard in ballet classes can help one acquire the core strength and ability to sense and control momentum that is necessary to be successful in any dance form. Instructor Barbara Campbell, a retired LLNL computer scientist who currently works as a consultant in the Engineering Directorate, teaches the ballet and modern dance classes at LLESA in addition to running ballet classes in the Adult Division of the Tri-Valley's non-profit ballet company, Valley Dance Theatre (VDT). Barbara, who returned to dancing in her 30s and went on to earn her Masters degree in dance from Mills College, takes pleasure in explaining the physics and kinesiology of dance as she teaches. This spring Barbara taught a class at LLESA called "Beginning Dance for Physicists," in which she used basic ballet and modern dance moves to help students understand through practice how a dancer uses forces and inertia to carry out basic dance movements.[2]

Whether you're new to dance or a seasoned veteran, there is a class out there for you! For more information on the LLESA dance classes, call the LLESA

DANCE OPPORTUNITIES, CONTINUED

office at 2-9402. Outside of working hours, Barbara Campbell teaches a beginning ballet class for adults at the VDT on Tuesday nights. The adult intermediate ballet class at VDT is held on Thursday nights. More information on the VDT Adult Division classes can be found on the VDT web page: http://www.valleydancetheatre.com/adult-division.

[1] http://www.pbs.org/newshour/rundown/2011/10/it-all-began-with-a-2.html

[2] http://web.hep.uiuc.edu/home/g-gollin/dance/dance_physics.html#hope

POSTDOC HIGHLIGHTS: NOTES TO THE DIRECTOR

APS Division of Plasma Physics special recognition at Fall Meeting

The 2012 Marshall N. Rosenbluth Outstanding Doctoral Thesis Award by the American Physical Society Division of Plasma Physics will be awarded to LLNL postdoc **Yu-hsin Chen**. The award, sponsored by General Atomics, Inc., was established to recognize "exceptional young scientists who have performed original thesis work of outstanding scientific quality and achievement in the area of plasma physics." The award certificate, to be presented at the Fall Division of Plasma Physics Annual Meeting, reads: "For measurements and theory of the ultrafast, high field, nonlinear response of gases near the ionization threshold, characterization of femtosecond plasma filaments, and demonstration that femtosecond filamentation requires plasma stabilization."

X-ray Bang-time Measurements at NIF using a Diamond Detector

X-ray bang time, corresponding to peak x-ray emission of an inertial confinement fusion (ICF) implosion, is used in NIF experiments to measure the energy coupling to the target by comparing measured bang time to predicted results from simulations. X-ray bang time is thus an important diagnostic for tuning the implosion velocity. Diamond photoconductive detectors (PCDs) are routinely used in ICF experiments for nuclear bang time or time-of-flight measurements. Recently, PCD detectors were modified to measure x-ray bang time with the goal of providing higher precision temporal measurements in comparison to x-ray framing cameras. In a *Review of Scientific Instruments* paper published online on June 22, LLNL researchers reported that an internal chemical vapor deposition polycrystalline photoconductive diamond detector (IPCD) fielded at NIF has successfully measured x-ray bang time for imploding capsules to within ±41to 46 ps. Its collimated view along a line of sight within a few degrees of the hohlraum axis provides a temporal history of the capsule emission that is not contaminated by hohlraum x-ray emission. Joining LLNL lead author Maria Barrios were researchers Andrew MacPhee, Joe Kimbrough, postdoc **Sabrina Nagel**, Robin Benedetti, Shahab Khan, Dave Bradley, Perry Bell, and Rip Collins.

"X-ray bang-time measurements at the National Ignition Facility using a diamond detector" http://rsi.aip.org/resource/1/rsinak/v83/i10/p10E105_s1

COMMENTS/SUGGESTIONS/PRAISE/COMPLAINTS?

Please send your feedback to the Editor (Nathan Kugland, kugland1@llnl.gov).

CAREER RESOURCES

Upcoming events:

August 7, 11 am – 12 pm:
PLS postdoc seminar series
B151 R1209 (Stevenson Room)
Swanee Shin, CMMD
Donghwa Lee, CMMD

August 14, 12 – 1:15 pm:
IPPB Brown Bag on Academic Teaching
Featuring panelists from Stanford, Santa Clara University, and San Jose.

> *"Overproduction of PhDs, caused by universities' recruitment of graduate students and postdocs to staff labs, without regard to the career opportunities that await them, has glutted the market with scientists hoping for academic research careers."*
>
> -Beryl Lieff Benderly in *A Stellar Opportunity*

ALTERNATIVE CAREERS?

Interested in a science career outside the mainstream?
Consider these suggestions from Experimental Error, by Adam Ruben

Alchemy: If I could convert lead into gold, I'd still be poor, because I don't have any lead. All of my pencils use graphite, and the lead-based paint has been stripped from my condo. Maybe an alchemist can first turn plastic into lead then turn the lead into gold. I have lots of plastic.
Geocentricism: Some may say the science has been settled - that Earth has long been proven not to be the center of the universe - but that's closed-mindedness. Also, Earth rides on the back of a great tortoise.
Reflexology: Apparently, diseases can be cured by rubbing your hands and feet in exactly the right places. See that little fleshy patch under your thumb? That's where the influenza lives, and if there's anything influenza hates, it's a pleasant massage.
Phrenology: Why use an MRI to scan someone's brain when you can garner all the information you need from the bumps on his or her head? Applying the tenets of phrenology, I can confidently say that the most intelligent person I ever met was a cauliflower.

CROWDSOURCING SCIENCE

In 1914, Ernest Shackleton announced his final expedition to Antarctica. In order to fund this endeavor, he sought donations from the public, even naming his lifeboats and sled dogs after prominent donors. Many took this opportunity to have their names enshrined, and to have an angry dog with a Dickensian name forever hate them for sending him to the coldest place on earth.

A recent article in Science Careers highlights modern efforts at funding scientific research through similar means. One such opportunity is the crowd-funding website petridish.org, which allows researchers to pitch a research proposal to the public on their topic of choice. Subject areas are highly diverse, ranging from cancer diagnostics to wolverine conservation to meteor craters. Although the funding amounts, $10,000-50,000, are relatively small, such efforts provide opportunities for unique projects which might otherwise fall through the cracks of larger funding agencies.

Similar systems have also been employed on a larger scale, as is the case for the Rare Genomics Institute, which seeks to discover cures for rare genetic diseases. In this model, individuals afflicted by such conditions post a profile, whereupon the public can donate toward the costs required for DNA sequencing and analysis of their genome. Armed with this information, physicians and scientists can explore possible causes and cures for the disease. As funding becomes more and more difficult to secure, crowdsourcing may be able to play an important niche role in advancing human knowledge.

—Nick Be

JOB LINKS

Science Careers nature jobs.com The premier science jobs recruitment website

Science Careers – Featured jobs:
http://scjobs.sciencemag.org/featured-jobs/
Nature – Jobs of the week:
http://www.nature.com/naturejobs/science/
Official LLNL jobs site: careers.llnl.gov
Postdoc listings: www.postdocjobs.com
Academic jobs: www.academickeys.com
APS Careers in Physics: www.aps.org/careers
Government jobs: www.usajobs.gov/
Industry jobs: www.indeed.com
sfbay.craigslist.org/jjj/
www.linkedin.com/jobs

SELECTED RECENT POSTDOC RESEARCH PUBLICATIONS

Bold = LLNL Postdoc. *Broadcast your achievements! Make new connections & help show how we are doing collectively.*

Guidelines: 1) Peer-reviewed and accepted publications (journal or conference proceedings) only; 2) Your affiliation must be LLNL; 3) Prepare a standard-format citation with all authors (no *et al*), the full title, journal/proceedings info, and a link to the online abstract; 4) Note which authors are LLNL postdocs, and in what division & group; 5) Send all of this to Nathan (kugland1@llnl.gov).

Computation/CASC:

Kento Sato, Adam Moody, **Kathryn Mohror**, Todd Gamblin, Bronis R. de Supinski, Naoya Maruyama, and Satoshi Matsuoka, "Design and Modeling of a Non-blocking Checkpointing System," LLNL-CONF-554431, Supercomputing 2012, Salt Lake City, UT, November 2012.

Tanzima Islam, **Kathryn Mohror**, Saurabh Bagchi, Adam Moody, Bronis R. de Supinski, and Rudolf Eigenmann, "mcrEngine: A Scalable Checkpointing System using Data-Aware Aggregation and Compression," LLNL-CONF-554251, Supercomputing 2012, Salt Lake City, UT, November 2012.

Physics/Fusion Energy Sciences: **E.T. Meier** and U. Shumlak, "A general nonlinear fluid model for reacting plasma-neutral mixtures," Phys. Plasmas 19, 072508 (2012) http://pop.aip.org/resource/1/PHPAEN/v19/i7

Physics/Program for Climate Model Diagnosis and Intercomparison: Huang, D., **Zhao, C.**, Dunn, M., Dong, X., Mace, G. G., Jensen, M. P., Xie, S., and Liu, Y.: "An intercomparison of radar-based liquid cloud microphysics retrievals and implications for model evaluation studies," Atmos. Meas. Tech., 5, 1409-1424, doi:10.5194/amt-5-1409-2012, 2012. http://www.atmos-meas-tech.net/5/1409/2012/amt-5-1409-2012.html

PLS/Atmospheric, Earth, Energy Division: **Trainor-Guitton, W**. and G. M. Hoversten, (2012), Stochastic Inversion for EM Geophysics: Practical Challenges & Improving Convergence Efficiency: Geophysics, **76**, no. 6, pp F373-F386, doi: 10.1190/GEO2010-0223.1 http://geophysics.geoscienceworld.org/content/76/6/F373.abstract

PLS/Chemical Sciences Division and PLS/Atmospheric, Earth, Energy Division***

Harley, S. J.*; **Mason, H. E.****; McAlpin, J. G.; Britt, R. D.; Casey, W. H., "A 31P NMR Investigation of the CoPi Water-Oxidation Catalyst," Chemistry – A European Journal **2012** http://onlinelibrary.wiley.com/doi/10.1002/chem.201201292/abstract

Panasci, A. F.; Ohlin, C. A.; **Harley, S. J.***; Casey, J. W., "Rates of water exchange on the [Fe4(OH)2(hpdta)2(H2O)4]o molecule and its implications for geochemistry," Inorg. Chem. **2012,** Accepted. http://3249238492kljf-pubs.acs.org/doi/abs/10.1021/ic300370q

Mason, H. E.**; **Harley, S. J.***; Maxwell, R. S.; Carroll, S. A., Probing the Surface Structure of Divalent Transition Metals Using Surface Specific Solid-State NMR Spectroscopy. *Environ Sci Technol* **2012,** *46* (5), 2806-2812. http://pubs.acs.org/doi/abs/10.1021/es203733c

Johnson, R. L.; **Harley, S. J.***; Ohlin, C. A.; Panasci, A. F.; Casey, W. H., Multinuclear NMR Study of the Pressure Dependence for Carbonate Exchange in the UO(2) (CO(3))(3) (4-) (aq) Ion. *Chemphyschem* **2011,** *12* (16), 2903-6. http://onlinelibrary.wiley.com/doi/10.1002/cphc.201100654/abstract

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